



## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

**RTID 0648-XC232**

#### **Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Tillamook South Jetty Repairs in Tillamook Bay, Oregon**

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Notice; issuance of incidental harassment authorizations.

**SUMMARY:** In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued two incidental harassment authorizations (IHAs) to the U.S. Army Corps of Engineers (USACE) – Portland District (Corps) to incidentally harass, by Level A and Level B harassment only, marine mammals during construction activities associated with a Tillamook South Jetty Repairs in Tillamook Bay, Oregon.

**DATES:** The Year 1 IHA is effective from November 1, 2022 through October 31, 2023. The Year 2 IHA is effective from November 1, 2024 through October 31, 2024.

**FOR FURTHER INFORMATION CONTACT:** Reny Tyson Moore, Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities>. In case of problems accessing these documents, please call the contact listed above.

#### **SUPPLEMENTARY INFORMATION:**

##### **Background**

The MMPA prohibits the “take” of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are proposed or, if the taking is limited to harassment, a notice of a proposed IHA is provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other “means of effecting the least practicable adverse impact” on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as “mitigation”); and requirements pertaining to the mitigation, monitoring and reporting of the takings are set forth.

The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

### **Summary of Request**

On February 11, 2022, NMFS received a request from the Corps for two one-year IHAs to take marine mammals incidental to repairs of the Tillamook South Jetty in Tillamook Bay, Oregon. The application was deemed adequate and complete on May 23, 2022. The Corps’ request is for take of five species of marine mammals by Level B harassment and, for a subset of these species (*i.e.*, harbor seals (*Phoca vitulina richardii*), northern elephant seals (*Mirounga angustirostris*), and harbor porpoises (*Phocoena*

*phocoena*)), take by Level A harassment. Neither the Corps nor NMFS expect serious injury or mortality to result from this activity and, therefore, IHAs are appropriate.

### **Description of Activity**

The Corps constructed, and continues to maintain, two jetties at the entrance of Tillamook Bay, Oregon to provide reliable navigation into and out of the bay. A Major Maintenance Report (MMR) was completed in 2003 to evaluate wave damage to the jetties and provide design for necessary repairs. Some repairs to the North Jetty were completed in 2010, and further repairs to the North Jetty root and trunk began in January 2022. The Tillamook South Jetty Repairs Project (*i.e.*, the “Corps’ activities”) will complete critical repairs to the South Jetty, as described in the MMR, with a focus on rebuilding the South Jetty head. Work will consist of repairs to the existing structures within the original jetty footprints (*i.e.*, trunk repairs and the construction of a 100-foot cap to repair the South Jetty Head), with options to facilitate land- and water-based stone transport, storage, and placement operations. A temporary material offload facility (MOF), which will be approximately 15 meters (m) (50 feet (ft)) by 30 m (100 ft), will be constructed at Kincheloe Point to transfer jetty rock from barges to shore at the South Jetty.

The two IHAs requested by the Corps will be associated with the construction (Year 1 IHA) and removal (Year 2 IHA) of the temporary MOF. Construction of the MOF will involve vibratory (preferred) and/or impact pile driving of up to 10 12-inch H piles, 24 24-inch timber or steel pipe piles, and 250 24-inch steel sheets (type NZ, AZ, PZ, or SCZ) (Table 1), and is anticipated to take 20 to 23 days and to occur between November 1, 2022 and February 15, 2023 or between July 1, 2023 and August 31, 2023 (Year 1). Removal of the MOF will involve vibratory extraction of all installed piles and sheets and is anticipated to take 13 days and is anticipated to occur between November 1, 2024 and February 15, 2025 or between July 1, 2025 and August 31, 2025 (Year 2). The

Corps' work windows are between November and February and between July and August each year to adhere to terms and conditions outlined in the U.S. Fish and Wildlife Service (USFWS) Biological Opinion (BiOp) to minimize potential take of the Western snowy plover (WSP), currently listed as threatened under the Endangered Species Act (ESA). Sounds resulting from pile installation and removal from the Corps' may result in the incidental take of marine mammals by Level A and Level B harassment. The Year 1 IHA is effective from November 1, 2022 to October 31, 2023; the Year 2 IHA is effective from November 1, 2024 to October 31, 2025.



A detailed description of the planned construction project is provided in the **Federal Register** notice for the proposed IHA (87 FR 38116; June 27, 2022). Since that time, no changes have been made to the planned construction activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the description of the specific activity

Mitigation, monitoring, and reporting measures are described in detail later in this document (please see **Mitigation** and **Monitoring and Reporting**).

### **Comments and Responses**

A notice of NMFS' proposal to issue two IHAs to the Corps was published in the **Federal Register** on June 27, 2022 (87 FR 38116). That notice described, in detail, The Corps' activities, the marine mammal species that may be affected by the activities, and the anticipated effects on marine mammals. In that notice, we requested public input on the request for authorization described therein, our analyses, the proposed authorizations, and any other aspect of the notice of proposed IHAs, and requested that interested persons submit relevant information, suggestions, and comments. This proposed notice was available for a 30-day public comment period.

NMFS received no public comments.

### **Changes from the Proposed IHA to Final IHA**

No substantive changes from the proposed IHAs to the final IHAs have been made that affect our analysis. Per the Corps' request the phrase "during pile driving" has been added to item 5(a) in the Year 2 IHA to clarify when monitoring by Protected Species Observers (PSOs) is required. In addition, typographical errors were identified in Table 4 in the Proposed IHA which have been corrected in the Final IHA (now Table 3). Specifically, the weighted cumulative sound exposure ( $L_{E,p}$ ) impulsive PTS onset thresholds for low frequency cetaceans, mid-frequency cetaceans, and phocid pinnipeds

were incorrect and have been corrected. No other changes have been made from the proposed IHAs to the final IHAs.

### **Description of Marine Mammals in the Area of Specified Activities**

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history of the potentially affected species. NMFS fully considered all of this information, and we refer the reader to these descriptions, incorporated here by reference, instead of reprinting the information. Additional information regarding population trends and threats may be found in NMFS' Stock Assessment Reports (SARs; [www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments](http://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments)) and more general information about these species (e.g., physical and behavioral descriptions) may be found on NMFS' website (<https://www.fisheries.noaa.gov/find-species>).

Table 2 lists all species or stocks for which take is expected and authorized for these activities, and summarizes information related to the population or stock, including regulatory status under the MMPA and ESA and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no serious injury or mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known,

that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS' U.S. Pacific SARs (*e.g.*, Carretta *et al.* 2021) or Alaska SARs (*e.g.*, Muto *et al.* 2020). All values presented in Table 2 are the most recent available at the time of publication and are available in the 2020 SARs (Carretta *et al.* 2021, Muto *et al.*, 2020) and draft 2021 SARs (available online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports>).

**Table 2. Species Likely Impacted by the Specified Activities**

Common name	Scientific name	MMPA Stock	ESA/MM PA status; Strategic (Y/N) <sup>1</sup>	Stock abundance N <sub>best</sub> , (CV, N <sub>min</sub> , most recent abundance survey) <sup>2</sup>	PBR	Annual M/SI <sup>3</sup>
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Phocoenidae (porpoises)						
Harbor Porpoise	<i>Phocoena phocoena</i>	Northern OR/WA Coast	-, -, N	21,487 (0.44; 15,123; 2011)	151	≥3.0
Order Carnivora – Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions)						
California sea lion	<i>Zalophus californianus</i>	U.S.	-, -, N	257,606 (N/A.; 233,515; 2014)	14,011	>320
Steller sea lion	<i>Eumetopias jubatus</i>	Eastern	-, -, N	43,201 (N/A; 43,201; 2017)	2,592	112
Family Phocidae (earless seals)						
Harbor seal	<i>Phoca vitulina richardii</i>	OR/CA Coastal	-, N	24,732 (0.12; N/A; 1999)	UND	10.6
Northern elephant seal	<i>Mirounga angustirostris</i>	California Breeding	-, -, N	187,386 (N/A; 85,369; 2013)	5,122	5.3

<sup>1</sup> - Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.



<sup>2</sup>- NMFS marine mammal stock assessment reports online at:

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>. CV is coefficient of variation;  $N_{\min}$  is the minimum estimate of stock abundance. In some cases, CV is not applicable (N.A.).

<sup>3</sup> - These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (e.g., commercial fisheries, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range. A CV associated with estimated mortality due to commercial fisheries is presented in some cases.

As indicated above, all 5 species (with 5 managed stocks) in Table 2 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur, and we have authorized it. All species (26 marine mammal species and 27 marine mammal stocks) that could potentially occur in the action areas are included in Table 3-3 of the Corps' application. The majority of the species listed in the Corps' table are unlikely to occur in the project vicinity. For example, numerous cetaceans (i.e., sei whale, *Balaenoptera borealis borealis*; fin whale, *Balaenoptera physalus physalus*; Risso's dolphin, *Grampus griseus*; common bottlenose dolphin, *Tursiops truncatus truncatus*; striped dolphin, *Stenella coeruleoalba*; common dolphin, *Delphinus delphis*; short-finned pilot whale, *Globicephala macrorhynchus*; Baird's beaked whale, *Berardius bairdii*; Mesoplodont beaked whale, *Mesoplodon spp.*; Cuvier's beaked whale, *Ziphius cavirostris*; pygmy sperm whale, *Kogia breviceps*; dwarf sperm whale, *Kogia sima*; sperm whale, *Physeter macrocephalus*) are only encountered at the continental slope (> 20 kilometers (km)/12 miles (mi) offshore) or in deeper waters offshore and will not be affected by construction activities. Other species may occur closer nearshore but are rare or infrequent seasonal inhabitants off the Oregon coast (i.e., minke whale, *Balaenoptera acutorostrata scammoni*; Pacific white-sided dolphin, *Lagenorhynchus obliquidens*; Northern right-whale dolphin, *Lissodelphis borealis*; killer whale, *Orcinus orca* ("Eastern North Pacific Southern Resident Stock"); Dall's porpoise, *Phocoenoides dalli dalli*). Given these considerations, the temporary duration of potential pile driving, and noise isopleths that will not extend beyond the bay entrance (please see **Estimated Take**), there

is no reasonable expectation for the Corps' activities to affect the above species and they will not be addressed further.

While ten marine mammal species could occur in the vicinity of the Corps' activities (*i.e.*, harbor seals; Northern elephant seal; Steller sea lion; California sea lion; humpback whales, *Megaptera novaeangliae*; fin whales, *Balaenoptera physalus*; gray whales, *Eschrichtius robustus*; blue whales, *Balaenoptera musculus*; killer whales, *Orcinus orca*; and harbor porpoises), Tillamook Bay is relatively shallow and noise resulting from the construction/deconstruction of the MOF will be limited to the interior waters of the bay and will not extend to coastal waters. Larger whales (*e.g.*, humpback whales, fin whales, gray whales, blue whales, killer whales) may transit the waters near the coastline but are unlikely inhabitants of Tillamook Bay itself. In reviewing OBIS-SEAMAP (2022) and records for all marine mammals recorded within a 16 km (10 mi) radius of Tillamook Bay, only humpback whales, gray whales, harbor porpoises, California sea lions, Steller sea lions, and harbor seals were commonly reported. Killer whales have only been seen on rare occasions (TinyFishTV, 2014; rempeetube, 2016; Corey.c, 2017), and Dall's porpoise (and northern right whale dolphins have been reported a bit further offshore (Halpin *et al.*, 2009; OBIS-SEAMAP, 2022). Gray whales and humpback whales have been observed in the vicinity of Tillamook Bay, however, they are highly unlikely to enter the relatively shallow waters of Tillamook Bay and be subject to pile driving noise disturbance. Given these considerations, take of these species (*i.e.*, humpback whales, fin whales, gray whales, blue whales, killer whales) is not expected to occur, and they are not discussed further beyond the explanation provided here.

A detailed description of the species likely to be affected by the Corps' project, including brief introductions to the species and relevant stocks as well as available information regarding population trends and threats, and information regarding local

occurrence, was provided in the Federal Register notice for the proposed IHA (87 FR 33116; June 27, 2022). Since that time, we are not aware of any changes in the status of these species and stocks; therefore, detailed descriptions are not provided here. Please refer to that Federal Register notice for these descriptions. Please also refer to NMFS' website (<https://www.fisheries.noaa.gov/find-species>) for generalized species accounts.

### **Potential Effects of Specified Activities on Marine Mammals and their Habitat**

The effects of underwater noise from the Corps' construction activities have the potential to result in behavioral harassment of marine mammals in the vicinity of the survey area. The notice of proposed IHAs IHA (87 FR 33116; June 27, 2022) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from the Corps' construction activities on marine mammals and their habitat. That information and analysis is incorporated by reference into this final IHA determination and is not repeated here; please refer to the notice of proposed IHAs (87 FR 33116; June 27, 2022).

### **Estimated Take**

This section provides an estimate of the number of incidental takes authorized through these IHAs, which will inform both NMFS' consideration of "small numbers" and the negligible impact determinations.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes will primarily be by Level B harassment, as use of the acoustic sources (*i.e.*, pile driving and removal) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result, primarily for high frequency cetaceans and/or phocids because predicted auditory injury zones are larger than for otariids. Auditory injury is unlikely to occur for otariids. The mitigation and monitoring measures are expected to minimize the severity of the taking to the extent practicable.

As described previously, no serious injury or mortality is anticipated or authorized for this activity. Below we describe how the take numbers are estimated.

For acoustic impacts, generally speaking, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these factors can contribute to a basic calculation to provide an initial prediction of potential takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.*, previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the take estimates.

#### *Acoustic Thresholds*

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

*Level B Harassment* – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying

degrees by other factors related to the source or exposure context (*e.g.*, frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the source), the environment (*e.g.*, bathymetry, other noises in the area, predators in the area), and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to predict (*e.g.*, Southall *et al.*, 2007, 2021, Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared pressure received levels (RMS SPL) of 120 dB (referenced to 1 micropascal (re 1  $\mu$ Pa)) for continuous (*e.g.*, vibratory pile-driving, drilling) and above RMS SPL 160 dB re 1  $\mu$ Pa for non-explosive impulsive (*e.g.*, seismic airguns) or intermittent (*e.g.*, scientific sonar) sources.

The Corps' activity includes the use of continuous (vibratory pile driving/removal) and impulsive (impact pile driving) sources, and therefore the RMS SPL thresholds of 120 and 160 dB re 1  $\mu$ Pa are applicable.

*Level A harassment* – NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). The Corps' activity includes the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving/removal) sources.

These thresholds are provided in the table below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS' 2018

Technical Guidance, which may be accessed at:

[www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance](http://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance).

**Table 3. Thresholds Identifying the Onset of Permanent Threshold Shift.**

	PTS Onset Thresholds* (Received Level)	
Hearing Group	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	<i>Cell 1</i> $L_{p,0-pk,flat}$ : 219 dB $L_{E,p,LF,24h}$ : 183 dB	<i>Cell 2</i> $L_{E,p,LF,24h}$ : 199 dB
Mid-Frequency (MF) Cetaceans	<i>Cell 3</i> $L_{p,0-pk,flat}$ : 230 dB $L_{E,p,MF,24h}$ : 185 dB	<i>Cell 4</i> $L_{E,p,MF,24h}$ : 198 dB
High-Frequency (HF) Cetaceans	<i>Cell 5</i> $L_{p,0-pk,flat}$ : 202 dB $L_{E,p,HF,24h}$ : 155 dB	<i>Cell 6</i> $L_{E,p,HF,24h}$ : 173 dB
Phocid Pinnipeds (PW) (Underwater)	<i>Cell 7</i> $L_{p,0-pk,flat}$ : 218 dB $L_{E,p,PW,24h}$ : 185 dB	<i>Cell 8</i> $L_{E,p,PW,24h}$ : 201 dB
Otariid Pinnipeds (OW) (Underwater)	<i>Cell 9</i> $L_{p,0-pk,flat}$ : 232 dB $L_{E,p,OW,24h}$ : 203 dB	<i>Cell 10</i> $L_{E,p,OW,24h}$ : 219 dB
<p>* Dual metric thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds are recommended for consideration.</p> <p>Note: Peak sound pressure level (<math>L_{p,0-pk}</math>) has a reference value of 1 <math>\mu</math>Pa, and weighted cumulative sound exposure level (<math>L_{E,p}</math>) has a reference value of 1 <math>\mu</math>Pa<sup>2</sup>s. In this Table, thresholds are abbreviated to be more reflective of International Organization for Standardization standards (ISO 2017). The subscript “flat” is being included to indicate peak sound pressure are flat weighted or unweighted within the generalized hearing range of marine mammals (<i>i.e.</i>, 7 Hz to 160 kHz). The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The weighted cumulative sound exposure level thresholds could be exceeded in a multitude of ways (<i>i.e.</i>, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these thresholds will be exceeded.</p>		

### *Ensonified Area*

Here, we describe operational and environmental parameters of the activity that are used in estimating the area ensonified above the acoustic thresholds, including source levels and transmission loss coefficient.

The sound field in the project area is the existing background noise plus additional construction noise from the Corp’s activities. Marine mammals are expected to

be affected via sound generated by the primary components of the project (*i.e.*, impact pile driving, vibratory pile driving, and vibratory pile removal).

*Sound Source Levels of Activities* – The intensity of pile driving sounds is greatly influenced by factors such as the type of piles, hammers, and the physical environment in which the activity takes place. In order to calculate distances to the Level A harassment and Level B harassment sound thresholds for the methods and piles being used in this project, NMFS used empirical data from sound source verification (SSV) studies reported in Navy (2015) and CALTRANS (2020), to develop source levels for the various pile types, sizes and methods (Table 4). These proxies were chosen as they were obtained from SSV studies on piles of comparable types and sizes and/or in comparable environments (*e.g.*, they had comparable water depths). Note that these source levels represents the SPL referenced at a distance of 10 m from the source. It is conservatively assumed that the Corps will use steel instead of timber for the 24-inch pipe piles as the estimated proxy values for steel are louder than timber (*e.g.*, Greenbusch Group, 2018; 84 FR 61026, November 12, 2019). It is also conservatively assumed that vibratory removal will produce comparable levels of in-water noise as vibratory installation.

**Table 4. Estimates of Underwater Sound Levels Generated During Vibratory and Impact Pile Installation, and Vibratory Pile Removal**

Pile Driving Method	Pile Description	Source Level (dB Peak)	Source Level (dB RMS)	Source Level (dB SEL)	Reference
Impact (attenuated <sup>1</sup> )	24-inch steel pipe pile	198	184	173	CALTRANS (2020)
Vibratory (installation and removal; unattenuated)	24-inch steel pipe pile	177	161	-	Navy (2015)
	24-inch AZ steel sheets	-	163	163	CALTRANS (2020)
	12-inch steel H-piles	165	150	147	CALTRANS (2020)

<sup>1</sup>The estimated SPLs for 24-inch steel pipes assume a 5 dB reduction resulting from the use of a confined bubble curtain system.

*Level B Harassment Zones* – Transmission loss (TL) is the decrease in acoustic intensity as an acoustic pressure wave propagates out from a source. TL parameters vary with

frequency, temperature, sea conditions, current, source and receiver depth, water depth, water chemistry, and bottom composition and topography. The general formula for underwater TL is:

$$TL = B * \log_{10} (R1/R2),$$

Where:

B = transmission loss coefficient (assumed to be 15)

R1 = the distance of the modeled SPL from the driven pile, and

R2 = the distance from the driven pile of the initial measurement.

This formula neglects loss due to scattering and absorption, which is assumed to be zero here. The degree to which underwater sound propagates away from a sound source is dependent on a variety of factors, most notably the water bathymetry and presence or absence of reflective or absorptive conditions including in-water structures and sediments. The recommended TL coefficient for most nearshore environments is the practical spreading value of 15. This value results in an expected propagation environment that will lie between spherical and cylindrical spreading loss conditions, which is the most appropriate assumption for the Corps' construction activities in the absence of specific modelling. All Level B harassment isopleths are reported in Table 6 considering RMS SSLs for impact and vibratory pile driving, respectively.

*Level A Harassment Zones* –The ensonified area associated with Level A harassment is more technically challenging to predict due to the need to account for a duration component. Therefore, NMFS developed an optional User Spreadsheet tool to accompany the Technical Guidance that can be used to relatively simply predict an isopleth distance for use in conjunction with marine mammal density or occurrence to help predict potential takes. We note that because of some of the assumptions included in the methods underlying this optional tool, we anticipate that the resulting isopleth estimates are typically going to be overestimates of some degree, which may result in an



overestimate of potential take by Level A harassment. However, this optional tool offers the best way to estimate isopleth distances when more sophisticated modeling methods are not available or practical. For stationary sources, such as vibratory and impact pile driving, the optional User Spreadsheet tool predicts the distance at which, if a marine mammal remained at that distance for the duration of the activity, it would be expected to incur PTS. Inputs used in the optional User Spreadsheet tool, and the resulting estimated isopleths, are reported in Table 5.

**Table 5. NMFS User Spreadsheet Inputs**

	Impact Pile Driving	Vibratory Pile Driving					
	Installation	Installation			Removal		
	24-inch steel pipe pile	24-inch steel pipe pile	24-inch AZ steel sheets	12-inch steel H-piles	24-inch steel pipe pile	24-inch AZ steel sheets	12-inch steel H-piles
Spreadsheet Tab Used	E.1) Impact pile driving	A.1) Non-Impul, Stat, Cont.	A.1) Non-Impul, Stat, Cont.	A.1) Non-Impul, Stat, Cont.	A.1) Non-Impul, Stat, Cont.	A.1) Non-Impul, Stat, Cont.	A.1) Non-Impul, Stat, Cont.
Source Level (SPL)	173 dB SEL	161 dB RMS	163 dB RMS	150 dB RMS	161 dB RMS	163 dB RMS	150 dB RMS
Transmission Loss Coefficient	15	15	15	15	15	15	15
Weighting Factor Adjustment (kHz)	2	2.5	2.5	2.5	2.5	2.5	2.5
Number of strikes per pile	533	--	--	--	--	--	--
Time to install / remove single pile (minutes)	--	15	10	10	5	3	3
Piles per day	4	8	25	10	12	50	10

**Table 6. Distances to Level A harassment, by hearing group, and Level B harassment thresholds per pile type and pile driving method**

Activity	Pile Description	Piles per day	Level A harassment distance (m)			Level A harassment areas (km <sup>2</sup> ) for all hearing groups	Level B harassment distance (m) all hearing groups <sup>1</sup>	Level B harassment areas (km <sup>2</sup> ) for all hearing groups <sup>1</sup>
			HF	PW	OW			
Impact Installation (attenuated) <sup>2</sup>	24-inch steel pipe pile	4	424.5	190.7	13.8	< 0.5	399	0.39
Vibratory Installation	24-inch steel pipe pile	8	16.0	6.6	0.5	< 0.1	5,412	20.14
	24-inch AZ steel sheets	14	35.5	14.6	1.0	< 0.1	7,357	27.01
	12-inch steel H-piles	10	2.6	1.1	0.1	< 0.1	1,000	1.84
Vibratory Removal	24-inch steel pipe pile	12	10.1	4.2	0.3	< 0.1	5,412	20.14
	24-inch AZ steel sheets	50	25.3	10.4	0.7	< 0.1	7,357	27.01
	12-inch steel H-piles	10	1.2	0.5	0.0	< 0.1	1,000	1.84

<sup>1</sup>Harassment areas have been truncated where appropriate to account for land masses

<sup>2</sup>Distances to Level A harassment, by hearing group, for impact pile driving were calculated based on SEL source levels as they resulted in larger, thus more conservative, isopleths for calculating PTS onset than Peak source levels

## *Marine Mammal Occurrence and Take Estimation*

In this section we provide information about the occurrence of marine mammals, including density or other relevant information, that inform the take calculations. We also describe how the information provided above is synthesized to produce a quantitative estimate of the take that is reasonably likely to occur and which is authorized.

In most cases, recent marine mammal counts, density estimates, or abundance estimates were not available for Tillamook Bay. Thus, information regarding marine mammal occurrence from proximal data obtained from nearshore sightings and haul-out sites (*e.g.*, Three Arch Rock) is used to approximate local abundance in Tillamook Bay. When proximal count estimates were available (*i.e.*, for harbor seals, Steller sea lions, and California sea lions), the Corps derived density estimates with an assumption that surveys accounted for animals present in the entirety of Tillamook Bay, an area roughly 37 km<sup>2</sup> (Oregon Coastal Atlas, 2022). The Corps multiplied marine mammal densities by isopleth areas to estimate potential take associated with pile driving. Given that marine mammal densities are likely not uniform in Tillamook Bay, NMFS instead estimates take associated with pile driving for these and the other marine mammal species assuming maximum daily occurrence rates (based on the abovementioned nearby proximal count estimates) multiplied by the total number of action days estimated per activity. There may be 20 (vibratory pile driving only) to 23 (vibratory and impact pile driving) total days of noise exposure from pile driving during the Corps' activities in Year 1 and 13 (vibratory removal only) total days of noise exposure from pile driving during the Corps' activities in Year 2. Takes for Year one for all species except harbor porpoises (see below) are estimated assuming that both vibratory and impact pile driving will be necessary and thus the maximum number of days of action days are required (*i.e.*, 23 days). Takes for Year two assume that 13 total action days are required. A summary of authorized take is available in Tables 7 and 8.

## *Harbor Porpoises*

There were multiple occurrences of 1-2 harbor porpoises detected in the coastal waters just north of the Tillamook Bay entrance during June and July of 1990 (Halpin *et al.*, 2009; Ford *et al.*, 2013). More recently, aerial surveys have detected single animals near the Tillamook Bay entrance in October 2011 and September 2012 (Adams *et al.*, 2014). Although there were no recorded harbor porpoise observations within Tillamook Bay itself, the species is somewhat cryptic and there is potentially low detection during aerial surveys. Thus, NMFS estimates the daily harbor porpoise abundance within Tillamook Bay to be 1 individual.

During Year 1, if impact pile driving is necessary for driving steel piles, the Level A harassment distance for this activity for harbor porpoises is larger than the Level B harassment distance (Table 6) and the shutdown zone (see Table 9 in the **Mitigation** section). Therefore, the Corps proposed that all harbor porpoises in Tillamook Bay on days when impact pile driving occurs will be taken by Level A harassment. NMFS concurs with this estimate and authorizes 9 instances of take by Level A harassment for harbor porpoises in Year 1 during construction of the MOF (1 harbor porpoise per day X 9 days of impact pile driving = 9 takes by Level A harassment).

During Year 1, if vibratory and impact pile driving is required, the Corps estimated that there could be 14 takes of harbor porpoises by Level B harassment (1 harbor porpoise per day X 12 days vibratory installing steel sheets = 12 takes by Level B harassment, and 1 harbor porpoise per day X 2 days vibratory installing H piles = 2 takes by Level B harassment, for a total of 14 takes by Level B harassment; Table 1). If only vibratory pile driving is required, the Corps estimated that 20 harbor porpoises may be taken by Level B harassment (1 harbor porpoise per day X 20 total action days; Table 1). Therefore, to be conservative, NMFS authorizes 20 instances of take by Level B harassment for harbor porpoises (the maximum estimate of animals that may be taken by

Level B harassment based on the two likely scenarios) in Year 1 during construction of the MOF.

During Year 2, the Corps requested and NMFS authorizes 13 instances of take by Level B harassment for harbor porpoises during vibratory removal of the MOF (1 harbor porpoise per day X 13 total action days; Table 1). No Level A harassment is anticipated to occur or is authorized. Considering the small Level A harassment zones (Table 6) in comparison to the required shutdown zones (see Table 9 in the **Mitigation** section) it is unlikely that a harbor porpoise will enter and remain within the area between the Level A harassment zone and the shutdown zone for a duration long enough to be taken by Level A harassment.

#### *California Sea Lions*

The estimate for daily California sea lion abundance ( $n = 11$ ) is based on coastal surveys conducted between 2002 and 2005 (Scordino, 2006). While pile driving will occur in winter or summer, the maximum number of animals detected during any month (*i.e.*, 11 sea lions in April) at the Three Arch Rock haul out site, located approximately 23 km (14 mi) from the site of the MOF, was used to estimate daily occurrence by the Corps. Given the distance of this haul out site from the Corps' activities, the fact that pile driving is not expected to occur in April due to timing constrictions, and the low likelihood that all animals present at the Three Arch Rock will leave and enter Tillamook Bay on a single day; the Corps' estimated that approximately half of the individuals present at Three Arch Rock (6 California sea lions) could potentially enter Tillamook Bay during pile driving and be subject to acoustic harassment. NMFS concurs and estimates, based on the best available science, the daily California sea lion abundance within Tillamook Bay to be 6 individuals.

During Year 1, NMFS authorizes 138 instances of take by Level B harassment for California sea lions during the construction of the MOF (6 California sea lions per day X

23 total action days required for impact and vibratory pile driving; Table 1). During Year 2, NMFS authorizes 78 instances of take by Level B harassment for California sea lions during vibratory removal of the MOF (6 California sea lions per day X 13 total action days; Table 1). Under either scenario, Level A harassment is not anticipated or authorized for Year 1 or Year 2. Considering the small Level A harassment zones (Table 6) in comparison to the required shutdown zones (see Table 9 in the **Mitigation** section) it is unlikely that a California sea lion will enter and remain within the area between the Level A harassment zone and the shutdown zone for a duration long enough to be taken by Level A harassment.

### *Steller Sea Lions*

The Corps and NMFS are unaware of any recent data regarding Steller sea lion abundance near Tillamook Bay. Therefore, seasonal Steller sea lion abundance was estimated based on the maximum number of animals detected ( $n = 38$  for between November and February, and  $n = 58$  between July and August) at the Three Arch Rock haul out site during coastal surveys between 2002 and 2005 (Scordino, 2006). Given that this haul out site is roughly 23 km (14 mi) away from the MOF, the Corps conservatively estimated that half of the individuals present at Three Arch Rock (19 Steller sea lions between November and February, and 29 Steller sea lions between July and August) could potentially disperse throughout Tillamook Bay during pile driving and be subject to harassment from the Corps' activities. For the purposes of our take estimation, NMFS conservatively assumes that the daily Steller sea lion abundance in Tillamook Bay is equivalent to the largest seasonal abundance that the Corps estimated will be present (*i.e.*, we assume that 29 individual Steller sea lions will be present each day in Tillamook Bay).

During Year 1, NMFS authorizes 667 instances of take by Level B harassment for Steller sea lions during the construction of the MOF (29 Steller sea lions per day X 23

total action days required for impact and vibratory pile driving; Table 1). During Year 2, NMFS authorizes 377 instances of take by Level B harassment for Steller sea lions during vibratory removal of the MOF (6 Steller sea lions per day X 13 total action days; Table 1). Under either scenario, Level A harassment is not anticipated or authorized for Year 1 or Year 2. The Level A harassment zones (Table 6) are smaller than the required shutdown zones (see Table 9 in the **Mitigation** section), therefore it is unlikely that a Steller sea lion will enter and remain within the area between the Level A harassment zone and the shutdown zone for a duration long enough to be taken by Level A harassment.

### *Harbor Seals*

The latest (May 2014) pinniped aerial surveys conducted by the Oregon Department of Fish and Wildlife (ODFW, 2022) estimated 220 harbor seals (pups and non-pups combined) within Tillamook Bay (B.E. Wright, personal communication, February 12, 2021). After applying the Huber *et al.* (2001) correction factor of 1.53, used to account for likely imperfect detection during surveys, the adjusted number of harbor seals that may have been present Tillamook Bay during the 2014 surveys is approximately 337 individuals. However, that estimate likely overestimates the number of harbor seals present in the non-pupping season. Therefore, the Corps used calculations from monthly surveys of Tillamook Bay haul out sites between 1978 and 1981 carried out by Brown and Mate (1983) to estimate the average proportion of animals present during the Corps' Nov – Feb and Jul – Aug construction windows (relative to counts observed in May). Accounting for these proportions (0.67 and 1.2, respectively), the Corps estimated that the 337 harbor seals likely present in May 2014 will have equated to an average abundance of 226 harbor seals between November and February and 404 harbor seals between July and August. For the purposes of our take estimation, NMFS conservatively assumes that the daily harbor seal abundance in Tillamook Bay is



equivalent to the largest seasonal abundance that the Corps estimated will be present (*i.e.*, we assume that 404 individual harbor seals will be present each day in Tillamook Bay).

During Year 1, NMFS estimates that 9,292 total instances of take for harbor seals will occur during the construction of the MOF (404 harbor seals per day X 23 total action days required for impact and vibratory pile driving; Table 1). NMFS estimates that 3,636 of these instances of take will be attributed to impact pile driving (404 harbor seals per day X 9 days impact pile driving) and the remaining 5,656 instances of take will be attributed to vibratory pile driving (404 harbor seals per day X 14 days vibratory pile driving). During impact pile driving, while a 100 m shutdown zone will be implemented for harbor seals (see Table 9 in the **Mitigation** section), an area of approximately 0.07 km<sup>2</sup> will still be ensonified above the Level A harassment threshold for phocids (Table 6). Given this remaining Level A harassment area for phocids is 17.95 percent of the Level B harassment area (0.39 km<sup>2</sup>), NMFS authorizes 653 (17.95 percent) of the total instances of take attributed to impact pile driving (*i.e.*, 17.95 percent of 3,636 instances of take), as instances of take by Level A harassment. NMFS authorizes the remaining 8,639 instances of take by Level B harassment.

During Year 2, NMFS authorizes 5,252 instances of take by Level B harassment for harbor seals during vibratory removal of the MOF (404 harbor seals per day X 13 total action days; Table 1). No take by Level A harassment is anticipated to occur or is authorized. The Level A harassment zones (Table 6) are smaller than the required shutdown zones (see the **Mitigation** section), therefore it is unlikely that a harbor seal will enter and remain within the area between the Level A harassment zone and the shutdown zone for a duration long enough to be taken by Level A harassment during MOF deconstruction.

*Northern Elephant Seal*

There were no recorded sightings of elephant seals within 16 km (10 mi) of Tillamook Bay within the OBIS-SEAMAP database (Halpin *et al.*, 2009; OBIS-SEAMAP, 2022) nor were any animals detected at the closest haul out site (*i.e.*, Three Arch Rock) during pinniped surveys between 2002 and 2005 (Scordino, 2006). In fact, the closest haul out site with Northern elephant seal observations during surveys was Cape Arago (Scordino 2006), roughly 6 km (4 mi) south of Coos Bay and 256 km (159 mi) south of Tillamook Bay. Given the low likelihood of occurrence within the project vicinity and the lack of reported sightings within the bay (Halpin *et al.*, 2009; OBIS-SEAMAP, 2022), the Corps conservatively estimated, and NMFS assumes, elephant seal abundance within Tillamook Bay at 1 individual every other day.

During Year 1, the Corps estimated that 12 northern elephant seals may be taken during the construction of the MOF (1 elephant seal every other day X 23 total action days; Table 1). If impact pile driving is necessary for driving steel piles, the Corps estimated that the total take during the 9 days of impact pile driving will be 5 individuals (1 elephant seal every other day X 9 total action days; Table 1). While a 100 m shutdown zone will be implemented for northern elephant seals during impact pile driving (see Table 9 in the **Mitigation** section), an area of approximately 0.07 km<sup>2</sup> will still be ensonified above the Level A harassment threshold for phocids during this activity (Table 6). Given this remaining Level A harassment area for phocids (0.07 km<sup>2</sup>) is 17.95 percent of the Level B harassment area (0.39 km<sup>2</sup>), NMFS authorizes 17.95 percent, or 1, instance of take by Level A harassment for northern elephant seals during impact pile driving (17.95 percent of the 12 total instances of take). The remaining 11 instances of take are authorized to be take by Level B harassment.

During Year 2, the Corps requested and NMFS authorizes 7 instances of Level B harassment take for northern elephant seals during vibratory removal of the MOF (1 elephant seal every other day X 13 total action days; Table 1). Level A harassment is not

anticipated or authorized. The Level A harassment zones (Table 6) are smaller than the required shutdown zones (see Table 9 in the **Mitigation** section), therefore it is unlikely that a northern elephant seal will enter and remain within the area between the Level A harassment zone and the shutdown zone for a duration long enough to be taken by Level A harassment during deconstruction of the MOF.

**Table 7. Authorized Amount of Taking in Year 1**

Species	Stock	Level A	Level B	Total	Instances of Take as a percentage of Stock Abundance
Harbor porpoise	Northern OR/WA Coast	9	20	29	0.14
California sea lion	U.S.	0	138	138	0.05
Steller sea lion	Eastern	0	667	667	1.54
Harbor seal	OR/CA Coastal	653	8,639	9,292	37.57
Northern elephant seal	California Breeding	1	11	12	0.01

**Table 8. Authorized Amount of Taking in Year 2**

Species	Stock	Level A	Level B	Total	Instances of Take as a percentage of Stock Abundance
Harbor porpoise	Northern OR/WA Coast	0	13	13	0.06
California sea lion	U.S.	0	78	78	0.03
Steller sea lion	Eastern	0	337	337	0.78
Harbor seal	OR/CA Coastal	0	5,252	5,252	21.24
Northern elephant seal	California Breeding	0	7	7	<0.01

## **Mitigation**

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses (latter not

applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks, and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, NMFS considers two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned), the likelihood of effective implementation (probability implemented as planned), and;

(2) The practicability of the measures for applicant implementation, which may consider such things as cost, and impact on operations.

The Corps must employ the following standard mitigation measures, as included in their application and the IHAs:

- The Corps must conduct briefings between construction supervisors and crews and the marine mammal monitoring team prior to the start of all pile driving activity, and when new personnel join the work, to ensure that responsibilities, communication procedures, marine mammal monitoring protocols, and operational procedures are clearly understood;
- For in-water work other than pile driving/removal (*e.g.*, stone placement, use of barge-mounted excavators, or dredging), if a marine mammal comes within 10 m

(33 ft), operations shall cease. Should a marine mammal come within 10 m (33ft) of a vessel in transit, the boat operator will reduce vessel speed to the minimum level required to maintain steerage and safe working conditions. If human safety is at risk, the in-water activity will be allowed to continue until it is safe to stop;

- In-water work activities may only occur when PSOs can effectively visually monitor for the presence of marine mammals, and when the entire shutdown zone and adjacent waters are visible (*e.g.*, including during daylight hours and when monitoring effectiveness is not reduced due to rain, fog, snow, etc.).
- For all pile driving/removal activities, the Corps must establish a minimum 15 m (49 ft) shutdown zone. The purpose of a shutdown zone is generally to define an area within which shutdown of activity will occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones will vary based on the type of driving/removal activity type and by marine mammal hearing group (see Table 9). Here, shutdown zones are larger than the calculated Level A harassment isopleth shown in Table 6, except for harbor porpoises, harbor seals, and northern elephant seals during impact driving of 24-inch steel piles when a 100-m shutdown zone will be visually monitored;

**Table 9. Shutdown Zones During Project Activities**

Activity	Pile Description	Distance (m)		
		HF	PW	OW
Impact Installation (attenuated)	24-inch steel pipe pile	100	100	15
Vibratory Installation	24-inch steel pipe pile	50	15	15
	24-inch AZ steel sheets	50	15	15
	12-inch steel H-piles	15	15	15
Vibratory Removal	24-inch steel pipe pile	15	15	15
	24-inch AZ steel sheets	50	15	15
	12-inch steel H-piles	15	15	15

- The Corps must delay or shutdown all pile driving activities should an animal approach or enter the appropriate shutdown zone. The Corps may resume activities after one of the following conditions have been met: (1) the animal is observed exiting the shutdown zone; (2) the animal is thought to have exited the shutdown zone based on a determination of its course, speed, and movement relative to the pile driving location; or (3) the shutdown zone has been clear from any additional sightings for 15 minutes;
- The Corps will employ PSOs trained in marine mammal identification and behaviors to monitor marine mammal presence in the action area, and must establish the following monitoring locations: during vibratory driving, at least one PSO must be stationed on the shoreline near the Port of Garibaldi to monitor as much of the Level B harassment zone as possible, and another PSO must be stationed on the shoreline adjacent to the MOF site to monitor the shutdown zone; during impact pile driving, two PSOs must be stationed on the shoreline adjacent to the MOF site to monitor the shutdown zone. The Corps must monitor the project area to the maximum extent possible based on the required number of PSOs, required monitoring locations, and environmental conditions. For all pile driving and removal at least two PSOs must be used;
- The placement of the PSOs during all pile driving and removal activities will ensure that the entire Level A harassment and shutdown zones are visible during pile installation and removal;
- Monitoring must take place from 30 minutes prior to initiation of pile driving (*i.e.*, pre-clearance monitoring) through 30 minutes post-completion of pile driving;
- If in-water work ceases for more than 30 minutes, the Corps will conduct pre-clearance monitoring of both the Level B harassment zone and shutdown zone;

- Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zones indicated in 9are clear of marine mammals. Pile driving may commence following 30 minutes of observation when the determination is made that the shutdown zones are clear of marine mammals;
- Marine mammals observed anywhere within visual range of the PSO will be tracked relative to construction activities. If a marine mammal is observed entering or within the shutdown zones indicated in Table 9, pile driving must be delayed or halted. If pile driving is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone (Table 9), or 15 minutes have passed without re-detection of the animal;
- Vibratory hammers are the preferred method for installing piles at the MOF. If impact hammers are required to install steel piles, a confined bubble curtain must be used to minimize noise levels. The bubble curtain must adhere by the following restrictions:
  - 1) The bubble curtain must distribute air bubbles around 100 percent of the piling circumference for the full depth of the water column;
  - 2) The lowest bubble ring must be in contact with the substrate for the full circumference of the ring, and the weights attached to the bottom ring shall ensure 100 percent substrate contact. No parts of the ring or other objects shall prevent full substrate contact; and
  - 3) Air flow to the bubblers must be balanced around the circumference of the pile;
- The Corps must use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of three strikes at reduced energy,

followed by a thirty-second waiting period, then two subsequent reduced energy strike sets. A soft start must be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of thirty minutes or longer. Soft starts will not be used for vibratory pile installation and removal. PSOs shall begin observing for marine mammals 30 minutes before "soft start" or in-water pile installation or removal begins;

- Pile driving activity must be halted upon observation of either a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met, entering or within the harassment zone;

Based on our evaluation of the applicant's measures, NMFS has determined that the mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

### **Monitoring and Reporting**

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104(a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present while conducting the activities. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:



- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.*, presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.*, source characterization, propagation, ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and,
- Mitigation and monitoring effectiveness.

### *Visual Monitoring*

Monitoring must be conducted by qualified, NMFS-approved PSOs, in accordance with the following:

- PSOs must be independent (*i.e.*, not construction personnel) and have no other assigned tasks during monitoring periods. At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued IHA. Other PSOs may substitute other relevant experience, education (degree in biological science or related field), or training for prior experience performing the duties of a PSO during construction activity pursuant

to a NMFS-issued IHA. PSOs must be approved by NMFS prior to beginning any activity subject to these IHAs; and

- PSOs will be placed at two vantage points as aforementioned in the **Mitigation** section (see Figure 1-3 of the Corps' IHA Application ) to monitor for marine mammals and implement shutdown/delay procedures when applicable by calling for the shutdown to the hammer operator;
- PSOs will use a hand-held GPS device or rangefinder to verify the required monitoring distance from the project site;
- PSOs will scan the waters within the Level A harassment and Level B harassment zones using binoculars (10x42 or similar) or spotting scopes (20-60 zoom or equivalent) and make visual observations of marine mammals present; and
- PSOs must record all observations of marine mammals, regardless of distance from the pile being driven. PSOs shall document any behavioral reactions in concert with distance from piles being driven or removed.

PSOs must have the following additional qualifications:

- Ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and

- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary;

Additionally, the Corps will have PSOs conduct one pinniped monitoring count a week prior to construction and report the number of marine mammals present within 500 m (1640 ft) of the Tillamook South Jetty or MOF. Upon completion of jetty repairs, PSOs will conduct two post-construction monitoring events, with one approximately 4 weeks after construction, and another at 8 weeks post construction. These post-construction marine mammal surveys will help to determine whether marine mammal detections post-construction were comparable to surveys conducted prior to construction.

### *Reporting*

Draft marine mammal monitoring reports will be submitted to NMFS within 90 days after the completion of pile driving (Year 1 IHA) and removal activities (Year 2 IHA), or 60 days prior to a requested date of issuance of any future IHAs for projects at the same location, whichever comes first. The reports will include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets. Specifically, the reports must include:

- Dates and times (begin and end) of all marine mammal monitoring;
- Construction activities occurring during each daily observation period, including the number and type of piles driven or removed and by what method (*i.e.*, impact or vibratory) and the total equipment duration for vibratory installation and removal for each pile or total number of strikes for each pile (impact driving);
- PSO locations during marine mammal monitoring;
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea

state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance;

- Upon observation of a marine mammal, the following information: Name of PSO who sighted the animal(s) and PSO location and activity at time of sighting; Time of sighting; Identification of the animal(s) (*e.g.*, genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species; Distance and bearing of each marine mammal observed relative to the pile being driven for each sighting (if pile driving was occurring at time of sighting); Estimated number of animals (min/max/best estimate); Estimated number of animals by cohort (adults, juveniles, neonates, group composition, sex class, etc.); Animal's closest point of approach and estimated time spent within the harassment zone; Description of any marine mammal behavioral observations (*e.g.*, observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (*e.g.*, no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);
- Number of marine mammals detected within the harassment zones and shutdown zones, by species;
- Detailed information about any implementation of any mitigation triggered (*e.g.*, shutdowns and delays), a description of specific actions that ensued, and resulting changes in behavior of the animal(s), if any;
- Description of other human activity within each monitoring period;
- Description of any deviation from initial proposal in pile numbers, pile types, average driving times, etc.;
- Brief description of any impediments to obtaining reliable observations during construction period; and

- Description of any impediments to complying with these mitigation measures.

If no comments are received from NMFS within 30 days, the draft final reports will constitute the final reports. If comments are received, a final report addressing NMFS comments must be submitted within 30 days after receipt of comments.

#### *Reporting Injured or Dead Marine Mammals*

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the IHA-holder must immediately cease the specified activities and report the incident to the Office of Protected Resources (OPR) ([PR.ITP.MonitoringReports@noaa.gov](mailto:PR.ITP.MonitoringReports@noaa.gov)), NMFS and to the West Coast Regional Stranding Coordinator as soon as feasible. If the death or injury was clearly caused by the specified activity, the Corps must immediately cease the specified activities until NMFS is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the IHAs. The Corps must not resume their activities until notified by NMFS. The report must include the following information:

- Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
- Species identification (if known) or description of the animal(s) involved;
- Condition of the animal(s) (including carcass condition if the animal is dead);
- Observed behaviors of the animal(s), if alive;
- If available, photographs or video footage of the animal(s); and
- General circumstances under which the animal was discovered.

#### **Negligible Impact Analysis and Determination**

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be “taken” through harassment, NMFS considers other factors, such as the likely nature of any impacts or responses (*e.g.*, intensity, duration), the context of any impacts or responses (*e.g.*, critical reproductive time or location, foraging impacts affecting energetics), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS’ implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

To avoid repetition, the discussion of our analysis applies to all the species listed in Table 2, other than harbor seals, given that the anticipated effects of this activity on these marine mammal stocks are expected to be similar. For harbor seals, there are meaningful differences in the amount of take; therefore, we provide a supplemental analysis for harbor seals, independent of the other species for which we authorize take.

Pile driving activities associated with the Corps’ construction activities, as outlined previously, have the potential to disturb or displace marine mammals. Specifically, the specified activities may result in take, in the form of Level B harassment

(behavioral disturbance), and for some species, Level A harassment incidental to underwater sounds generated from pile driving. Takes could occur if individuals are present in zones ensonified above the thresholds for Level B harassment and Level A harassment, identified above, while activities are underway. NMFS does not anticipate that serious injury or mortality will occur as a result of the Corps' planned activity given the nature of the activity, even in the absence of required mitigation. For all species and stocks, take will occur within a limited, confined area (adjacent to the project site) of the stock's range. Required mitigation is expected to minimize the duration and intensity of the authorized taking by Level A and Level B harassment. Further, the amount of take authorized is extremely small for 4 of the 5 species when compared to stock abundance.

The primary method of installation will be vibratory pile driving. Vibratory pile driving produces lower SPLs than impact pile driving. The rise time of the sound produced by vibratory pile driving is slower, reducing the probability and severity of injury. Impact pile driving produces short, sharp pulses with higher peak levels and much sharper rise time to reach those peaks. If impact pile driving is used, implementation of soft start measures, a bubble curtain, and shutdown zones will significantly reduce any possibility of injury. Given sufficient notice through use of soft starts (for impact driving), marine mammals are expected to move away from a sound source prior to it becoming potentially injurious. The Corps will use two PSOs stationed strategically to increase detectability of marine mammals during pile installation and removal, enabling a high rate of success in implementation of shutdowns to avoid injury for most species.

Instances of Level A harassment take are not authorized for California sea lions and Steller sea lions in Year 1 or for any species in Year 2. Instances of Level A harassment takes are authorized for nine harbor porpoises, one northern elephant seal, and 653 harbor seals in Year 1. All of these Level A harassment takes are attributed to impact pile driving, which if implemented, will only occur intermittently on up to nine

days with the required mitigation measures described above, minimizing potential for take by Level A harassment. In addition, the calculated Level A harassment likely overestimates PTS exposure because: (1) individuals are unlikely to remain in the Level A harassment zone long enough to accumulate sufficient exposure to noise resulting in PTS, and (2) the estimates assume new individuals are in the Level A harassment zone every day during impact pile driving. Further, should individuals be repeatedly exposed to accumulated sound energy, impact pile driving will only occur intermittently for up to nine days, minimizing any severe impacts to individual fitness, reproduction, or survival. Nonetheless, we have considered the potential impacts of these PTS takes occurring in this analysis. Due to the levels and durations of likely exposure, animals that experience PTS will likely only receive slight PTS, *i.e.* minor degradation of hearing capabilities within regions of hearing that align most completely with the frequency range of the energy produced by pile driving (*i.e.*, the low-frequency region below 2 kilohertz (kHz)), not severe hearing impairment or impairment in the regions of greatest hearing sensitivity. If hearing impairment does occur, it is most likely that the affected animal will lose a few dBs in its hearing sensitivity, which in most cases, is not likely to meaningfully affect its ability to forage and communicate with conspecifics.

Additionally, and as noted previously, some subset of the individuals that are behaviorally harassed could also simultaneously incur some small degree of TTS for a short duration of time. Because of the small degree anticipated, though, any TTS incurred will not be expected to adversely impact individual fitness, let alone annual rates of recruitment or survival.

Behavioral responses of marine mammals to pile driving and removal in Tillamook Bay are expected to be mild, short term, and temporary. Marine mammals within the Level B harassment zones may not show any visual cues they are disturbed by activities or they could become alert, avoid the area, leave the area, or display other mild



responses that are not observable such as changes in vocalization patterns or increased haul out time (Thorson and Reyff, 2006). Given that pile driving and removal will occur intermittently for only a short duration (20-23 days in Year 1 and 13 days in Year 2), often on nonconsecutive days, any harassment occurring will be temporary. Additionally, many of the species present in the region will only be present temporarily based on seasonal patterns or during transit between other habitats. These temporarily present species will be exposed to even smaller periods of noise-generating activity, further decreasing the impacts. Most likely, individuals will simply move away from the sound source and be temporarily displaced from the areas of pile driving, although even this reaction has been observed primarily only in association with impact pile driving, which will only be used if necessary. The pile driving activities analyzed here are similar to, or less impactful than, other construction activities conducted in Oregon, which have taken place with no known long-term adverse consequences from behavioral harassment. Level B harassment will be reduced to the level of least practicable adverse impact through use of mitigation measures described herein and, if sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the area while the activity is occurring.

The Corps' activities are limited in scope spatially. While precise impacts will not be known until the MOF has been designed, based on a MOF built for a similar project (The Coos Bay North Jetty Maintenance project, <https://www.fisheries.noaa.gov/action/incidental-take-authorization-us-army-corps-engineers-north-jetty-maintenance-and-repairs>), it is estimated that temporary impacts below the high tide line (HTL) will be limited to 0.14 acres or less. The full extent of the MOF and associated access dredging will be approximately 3.6 acres, with an additional 3.7 acres of upland disturbance associated with the MOF staging area. For all species, there are no known habitat areas of particular importance (e.g., Biologically Important

Areas (BIAs), critical habitat, primary foraging or calving habitat) in the project area that will be impacted by the Corps' activities. In general, cetaceans and pinnipeds are infrequent visitors near the site of the Corps' construction activities due to shallow waters in this region further reducing the likelihood that cetaceans and pinnipeds will approach and be present within the ensonified areas. Further, none of the harassment isopleths block the entrance out of Tillamook Bay (see Figures 6-1 and 6-2 in the Corps' application), thus marine mammals could leave the bay and engage in foraging, social behavior or other activities without being subject to Level A or Level B harassment.

The impact of harassment on harbor seals is difficult to assess given the most recent abundance estimate available for this stock is from 1999 (Table 2). We are aware that there is one haul-out site located approximately 1.5 km (0.9 mi) east of the Corps' construction site on an intertidal sand flat in the middle of the bay (see Figure 4-1 in the Corps' application) that has been historically noted in Tillamook Bay. Given the Level B harassment distances for vibratory installation and removal of 24-inch steel pipe piles and 24-inch AZ steel sheets are larger than 1.5 km (0.9 mi) (see Table 6), we can presume that some harbor seals will be repeatedly taken. In addition, while there are no known pinniped haul outs on Bayocean spit, harbor seals and other pinnipeds may be resting or hauled out on land near the site of the MOF construction, jetty rocks, or nearby beaches. Repeated, sequential exposure to pile driving noise over a long duration could result in more severe impacts to individuals that could affect a population; however, the limited number of non-consecutive pile driving days for this project means that these types of impacts are not anticipated.

The project also is not expected to have significant adverse effects on affected marine mammal habitat. The project activities will not modify existing marine mammal habitat for a significant amount of time. Any impacts on marine mammal prey that will occur during the Corps' planned activity will have, at most, short-term effects on

foraging of individual marine mammals, and likely no effect on the populations of marine mammals as a whole. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammal foraging opportunities in a limited portion of the foraging range. However, because of the short duration of the activities and the small area of the habitat that may be affected, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences. Indirect effects on marine mammal prey during the construction are expected to be minor, and these effects are unlikely to cause substantial effects on marine mammals at the individual level, with no expected effect on annual rates of recruitment or survival.

In addition, it is unlikely that minor noise effects in a small, localized area of habitat will have any effect on the stocks' annual rates of recruitment or survival. In combination, we believe that these factors, as well as the available body of evidence from other similar activities, demonstrate that the effects of the specified activities will have only minor, short-term effects on individuals. The specified activities are not expected to impact rates of recruitment or survival and will, therefore, not result in population-level impacts.

In summary and as described above, the following factors primarily support our determination that the impacts resulting from this activity are not expected to adversely affect any of the species or stocks through effects on annual rates of recruitment or survival:

- No serious injury or mortality is anticipated or authorized;
- For all species except harbor seals in Year 1, only a few individuals are expected to incur PTS in any year (nine harbor porpoises in Year 1, one elephant seal in Year 1, and zero individuals for all other species and years), and any single instance of exposure above the PTS threshold is expected to result in only a small degree of hearing loss, which is not expected to impact reproduction or survivorship of any individuals;

- Though the higher predicted numbers of harbor seal PTS in Year 1 suggest that there may be repeated exposures of some number of individuals above PTS thresholds, which could potentially result in a greater degree of PTS accrued to those individuals, given the intermittency (non-consecutive days) of the pile driving and the anticipated duration and levels of exposure, still only a relatively small degree of hearing loss is anticipated and not expected to impact reproduction or survival;

- The Corps will implement mitigation measures including soft-starts and shutdown zones to minimize the numbers of marine mammals exposed to injurious levels of sound, and to ensure that take by Level A harassment is, at most, a small degree of PTS;

- Take will not occur in places and/or times where take will be more likely to accrue to impacts on reproduction or survival, such as within BIAs, or other habitats critical to recruitment or survival (*e.g.*, rookery);

- Take will occur over a short timeframe (*i.e.*, intermittently over up to 23 and 13 non-consecutive days in Year 1 and Year 2, respectively). This short timeframe minimizes the probability of multiple exposures on individuals, and any repeated exposures that do occur (which are more likely for harbor seals) are not expected to occur on sequential days, decreasing the likelihood of physiological impacts caused by chronic stress or sustained energetic impacts that might affect survival or reproductive success;

- Any impacts to marine mammal habitat from pile driving (including to prey sources as well as acoustic habitat, *e.g.*, from masking) are expected to be temporary and minimal; and

- Take will only occur within a small portion of Tillamook Bay—a limited, confined area of any given stock's home range.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the

implementation of the monitoring and mitigation measures, NMFS finds, specific for both the Year 1 and Year 2 IHAs, that the total marine mammal take from the Corps' activity will have a negligible impact on all affected marine mammal species or stocks.

### **Small Numbers**

As noted above, only small numbers of incidental take may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one-third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

The amount of take NMFS authorizes is below one third of the estimated stock abundance for all but one species (in fact, take of individuals is less than two percent of the abundance of four of the five affected stocks, see Tables 7 and 8). The estimated instances of take as percentages of stock abundance shown in the Tables 7 and 8 are if we assume all takes are of different individual animals, which is likely not the case. Some individuals may return multiple times in a day, but PSOs will count them as separate takes if they cannot be individually identified. More importantly, due to their behavior in the area, some individuals will likely be taken on multiple days, resulting in a lower number of individuals taken than the predicted number of instances in Tables 7 and 8.

There is no current estimate of abundance available for this harbor seals (Carretta *et al.*, 2021). In 1999, aerial surveys of harbor seals in Oregon and Washington were conducted by the National Marine Mammal Laboratory (NMLL) and the Oregon and

Washington Departments of Fish and Wildlife (ODFW and WDFD) during the pupping season. After applying a correction factor to account for seals missed during aerial surveys (Huber *et al.*, 2001), they estimated that the population size of the Oregon/Washington Coast Stock of harbor seals was 24,732 (CV = 0.12) in 1999. Historical and current trends of harbor seal abundance in Oregon and Washington are unknown. Based on the analyses of Jeffries *et al.* (2003) and Brown *et al.* (2005), both the Washington and Oregon portions of this stock were reported as reaching carrying capacity. While the authorized instances of take for harbor seals equates to 37.57 percent of the 1999 abundance estimate in Year 1 and 21.24 percent of this abundance in Year 2, harbor seals are not known to make extensive migrations and are known to display strong fidelity to haul out sites (Pitcher and Calkins, 1979; Pitcher and McAllister, 1981). Therefore, we presume that some of the harbor seals present in the action area will be repeatedly taken and actual number of individuals exposed to Level A and Level B harassment will be much lower. Further, we calculated take estimates of harbor seals assuming the maximum seasonal abundance of individuals were present in Tillamook Bay during each action day; however, work may occur during other times of the year when harbor seal abundance is estimated to be lower, and thus the actual number of individuals exposed to Level A and Level B harassment will be lower. Lastly, take will occur in a small portion of Tillamook Bay and it is unlikely that a third of the stock will be in these waters during the short duration of the Corps' activities.

Based on the analysis contained herein of the Corps' activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds, for both the Year 1 and Year 2 IHAs, that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks.

#### **Unmitigable Adverse Impact Analysis and Determination**

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has determined that the total taking of affected species or stocks will not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

### **Endangered Species Act**

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA: 16 U.S.C. 1531 *et seq.*) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS consults internally whenever we propose to authorize take for endangered or threatened species.

No incidental take of ESA-listed species is authorized or expected to result from the Corps' activities. Therefore, NMFS has determined that formal consultation under section 7 of the ESA is not required for this action.

### **National Environmental Policy Act**

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216-6A, NMFS must evaluate our action (i.e., the issuance of two IHAs) and alternatives with respect to potential impacts on the human environment. This action is consistent with categories of activities identified in Categorical Exclusion B4 of the Companion Manual for NAO 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has determined that this action qualifies to be categorically excluded from further NEPA review.

### **Authorization**

NMFS has issued two IHAs to the Corps' for the potential harassment of small numbers of five marine mammal species incidental to conducting repairs of the Tillamook South Jetty in Tillamook Bay, Oregon, that includes the previously explained mentioned mitigation, monitoring and reporting requirements.

Dated: August 12, 2022.

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Kimberly Damon-Randall,  
Director, Office of Protected Resources,  
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